WHAT IS CLAIMED IS:

1. A data recording method for calculating a digital sum value (DSV) corresponding to a proportion of positive data and negative data included in predetermined data ranges, selecting a resync pattern to be inserted between the data ranges according to the DSV, and inserting the selected resync pattern between the data ranges, the data recording method comprising a step of selecting a resync pattern that minimizes differences in DSV between the data ranges.

2. The data recording method as claimed in claim 1, comprising the steps of:

calculating a first DSV of a first data range;

calculating a second DSV of both a second data range continuous with the first data range and a first resync pattern;

calculating a third DSV of the second data range and a second resync pattern;

selecting either the second or the third DSV depending on whichever differs less from the first DSV; and

inserting either the first resync pattern or the second resync pattern between the first data range and the second data range depending on either the second DSV or the third DSV, whichever is selected.

3. The data recording method as claimed in claim 2, wherein the second resync pattern inverts the positive data and the negative data included in the second data range.

4. The data recording method as claimed in claim 2, wherein the step of selecting either the second or the third DSV depending on whichever differs least from the first DSV involves selecting either the second DSV or the third DSV whenever the difference between either the second or third DSV and the first DSV is less than a predetermined value.

5. A data reproduction method for calculating an amount of change in a DC component of a reproduction wave form, correcting an expected value in response to a moving average value of the amount of change in the DC component, and reproducing data in response to the corrected expected value, the method comprising the steps of:

calculating a present amount of change in the DC component;

calculating a moving average value of the present DC component change amount and a previous DC component change amount;

calculating a moving average value of predetermined data blocks according to a first divisor used to calculate the moving average value;

and

calculating a moving average value of a resync pattern portion inserted between the predetermined data blocks according to a second divisor used to calculate the moving average value that is less than the first divisor used to calculate the moving average value.

6. The data reproduction method as claimed in claim 5, wherein the first divisor used to calculate the moving average value and the second divisor used to calculate the moving average value can be varied.

7. The data reproduction method as claimed in claim 5, wherein a width of the resync pattern can be varied.

8. The data recording method as claimed in claim 5, wherein the data reproduction method further comprises the steps of:

storing one or more moving average values of the predetermined data blocks in a storage unit; and

selecting one of the moving average values stored in the storage unit and setting the selected moving average value as an initial moving average value for the predetermined data blocks.

9. A data recording device for calculating a digital sum value (DSV) corresponding to a proportion of positive data and negative data included in predetermined data ranges, selecting a resync pattern to insert between the data ranges according to the DSV, and inserting the selected resync pattern between the data ranges, the data recording device comprising a unit for selecting a resync pattern that minimizes differences in DSV between the data ranges.

10. The data recording device as claimed in claim 9, comprising:

a first calculating unit for calculating a first digital sum value (DSV) of a first data range;

a second calculating unit for calculating a second DSV of both a second data range continuous with the first data range and a first resync pattern;

a third calculating unit for calculating a third DSV of the second data range and a second resync pattern;

a selecting unit for selecting either the second or the third DSV depending on whichever differs less from the first DSV; and

an inserting unit for inserting either the first resync pattern or the second resync pattern between the first data range and the second data range depending on either the second DSV or the third DSV, whichever is selected.

11. The data recording device as claimed in claim 9, wherein the second resync pattern inverts the positive data and the negative data included in the second data range.

12. The data recording device as claimed in claim 9, wherein either the second DSV or the third DSV is selected whenever the difference between either the second or third DSV and the first DSV is less than a predetermined value.

13. The data recording device as claimed in claim 9, further comprising a data range setting unit for setting a range of data to be used for calculating the first, second and third DSV.

14. A data reproduction device for calculating an amount of change in a DC component of a reproduction wave form, correcting an expected value in response to a moving average value of the amount of change in the DC component, and reproducing data in response to the corrected expected value, the device comprising:

a present DC component change amount

calculating unit for calculating a present amount of change in the DC component; and

a moving average value calculating unit for calculating a moving average value of the present DC component change amount and a past DC component change amount,

the moving average value calculating unit for calculating a moving average value of a DC component change amount corresponding to predetermined data blocks according to a first divisor used to calculate the moving average value, the moving average value calculating unit calculating a moving average value of a resync pattern portion inserted between the predetermined data blocks according to a second divisor used to calculate the moving average value that is less than the first divisor used to calculate the moving average value.

15. The data reproduction device as claimed in claim 14, wherein the first divisor used to calculate the moving average value and the second divisor used to calculate the moving average value can be varied.

16. The data reproduction device as claimed in claim 14, wherein a width of the resync pattern can be varied.

17. The data reproduction device as claimed in claim 14, wherein the data reproduction device further comprises:

a storing unit for storing one or more moving average values of the predetermined data blocks; and

a selecting unit for selecting one of the moving average values stored in the storing unit and setting the selected moving average value as an initial moving average value for the predetermined data blocks.

18. An optical recording medium on which data is recorded, the data having a resync pattern inserted between predetermined data ranges according to a digital sum value (DSV) corresponding to a proportion of positive data and negative data included in the data ranges, the resync pattern being such as to minimize differences in DSV between the data ranges.